

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 09/542,866

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (withdrawn): A card transporting mechanism for a card reader in which the trailing end of a card as viewed in a card transporting direction is brought into contact with a first card engaging/holding member moving in a card transporting direction, and the card is transported by said first card engaging/holding member, said card transporting mechanism comprising:

a carriage movable in the card transporting direction, said first card engaging/holding member being mounted on such that said first card engaging/holding member is movable between a first position where said first card engaging/holding member comes in contact with the trailing end of said card and a second position where said first card engaging/holding member does not come in contact with said card; and

a transportation drive member, for transporting the card, coupled to said first card engaging/holding member such that a position of said first card engaging/holding member changes in accordance with a moving direction of said transportation drive member, and when said card travels in a first direction, said first card engaging/holding member is located, by said transportation drive member, at a position where said first card engaging/holding member comes in contact with the trailing end face of said card, and said card is transported by moving said carriage.

2. (withdrawn): The card transporting mechanism according to claim 1, wherein a second card engaging/holding member, which is movable between a third position where said

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second card engaging/holding member comes in contact with the leading end of said card and a fourth position where said second card engaging/holding member does not come in contact with the leading end of said card and a fourth position, is coupled to said carriage such that when said first card engaging/holding member is at said first position, said second card engaging/holding member is placed at said fourth position, and when said card is transported in the reverse direction, said second card engaging/holding member is placed at said third position, and said carriage is moved to transport said card.

3. (withdrawn): The card transporting mechanism according to claim 1 or 2, wherein said first card engaging/holding member, which is located closer to the card entrance side at the time of card insertion, is located at said second position.

4. (withdrawn): The card transporting mechanism according to claim 2, wherein said first and second card engaging/holding members are rotatably mounted on said carriage, and said transportation drive member is a string-like member with an engaging portion so that said first and second card engaging/holding members are controllable from both sides thereof.

5. (withdrawn): The card transporting mechanism according to claim 3, wherein said first and second card engaging/holding members are rotatably mounted on said carriage, and said transportation drive member is a string-like member with an engaging portion so that said first and second card engaging/holding members are controllable from both sides thereof.

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6. (withdrawn): A method for discharging forcibly card for a card reader in which a card inserted through an card entrance taken into the inner part of the card reader by a card transporting means, comprising the steps of:

coming a card engaging member coming in contact with said card being provided on a moving body moving together with said card so as to taking said card that is inserted through said card entrance into the inner part of said image reader by said card transporting means, when said card stays at said card entrance, said moving body is moved to the inner part and said card engaging member is moved to a position where said card engaging member comes in contact with said card; and

moving said moving body toward said card entrance, and said card engaging means being brought into engagement with the inner-side end face of said card from the inner part of said card reader, to thereby discharge said card out of said card reader.

7. (withdrawn): A forcibly card discharging mechanism for a card reader in which a card inserted through an card entrance is taken into the inner part of the card reader by a card transporting means, said card discharging mechanism comprising:

a moving body moving together with said card so as to taking said card that is inserted through said card entrance into the inner part of said image reader by said card transporting means; a card engaging member moving together with said moving body, coming in contact with said card, and also the inner-side end face of said card; and

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detecting means for detecting that said card stays at said card entrance;
wherein said detecting means detects that said card stays, said moving body is moved,
thereafter said moving body is moved, and said card engaging means is brought into engagement
with the inner-side end face of said card from the inner part of said card reader, to thereby
discharge said card out of said card reader.

8. (withdrawn): The forcibly card discharging mechanism according to claim 7, wherein
said card engaging member is a pressing member for pressing said card against one of a card
transportation reference surface and a card engaging pawl member for transporting said card.

9. (withdrawn): The forcibly card discharging mechanism according to claim 8, wherein
said card transporting means includes a first card transporting means for taking a card inserted
through said card entrance into said card reader, and a second card transporting means for
receiving said card taken in by said first card transporting means and for transporting said card
within said card reader, and said second card transporting means transports said card by moving
said moving body.

10. (withdrawn): The forcibly card discharging mechanism according to claim 9,
wherein said first card transporting means includes card engaging pawl members located at the
front and rear ends of said moving body, said card engaging pawl members raise and lay down in

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a reverse fashion, and each said card engaging pawl member engages the front end face or the inner-side end face of said card while standing erect, to thereby transport said card.

11. (withdrawn): A drive force transmission mechanism for selectively transmitting a rotation of a motor to one of two drive systems comprising:

first and second follower-side rotational gears provided coaxial with a drive-side rotational gear rotated by said motor,

a planetary gear member in mesh with said drive-side rotational gear and said second follower-side rotational gear mounted on said first follower-side rotational gear,

selective engaging/stopping means for selectively engaging and stopping one of said first and second follower-side rotational gears is provided,

wherein said drive systems are coupled to said first and second follower-side rotational gears.

12. (withdrawn): The drive force transmission mechanism according to claim 11, wherein said drive-side rotational gear and said first and second follower-side rotational gears are provided on a single shaft in a juxtaposing fashion, said planetary gear member includes two planetary gears mounted at both ends of a shaft rotatably held at an eccentric position of said first follower-side rotational gear, said first follower-side rotational gear includes a latch portion latched by said selective engaging/stopping means and a drive-force transmission gear portion, which are disposed around said first follower-side rotational gear, said second follower-side

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rotational gear includes a gear portion in mesh with said planetary gear, and a latch portion latched by said selective engaging/stopping means and a drive-force transmission gear portion, which are disposed around said second follower-side rotational gear.

13. (withdrawn): The drive force transmission mechanism according to claim 12, wherein said selective engaging/stopping means includes a rotational member with two engaging members which may engage said two latch portions, and is rotated by a solenoid.

14. (withdrawn): The drive force transmission mechanism according to claim 12, wherein said engaging member includes engaging pawls which may engage said bifurcated latch portion.

15. (withdrawn): A card transporting mechanism for selectively transmitting a rotation of a motor to one of a card taking-in/discharging drive means and a card transporting drive means comprising:

first and second follower-side rotational gears provided coaxial with a drive-side rotational gear rotated by said motor;

a planetary gear member in mesh with said drive-side rotational gear and said second follower-side rotational gear mounted on said first follower-side rotational gear;

selective engaging/stopping means for selectively engaging and stopping one of said first and second follower-side rotational gears is provided,

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wherein said card transporting drive means is coupled to one of said first and second follower-side rotational gears.

16. (withdrawn): The card transporting mechanism according to claim 15, wherein said card transporting drive means includes a card transporting member for transporting a card while being in contact with the trailing end of said card, said taking-in/discharging drive means takes in an inserted card to a position where said card transporting member comes in contact with the trailing end of said card.

17. (withdrawn): A card transporting mechanism comprising:
a card engaging/holding member moving in a card transporting direction, the trailing end of a card as viewed in a card transporting direction being brought into contact with said card engaging/holding member moving in a card transporting direction, and the card is transported by said card engaging/holding member,
a carriage movable in the card transporting direction, said card engaging/holding member is mounted on said carriage movable in the card transporting direction such that said card engaging/holding member is movable between a first position where said card engaging/holding member comes in contact with the trailing end of said card and a second position where said card engaging/holding member does not come in contact with said card, said card engaging/holding member is moved between said first and second positions by a transportation drive member for transporting said card; and

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a blocking portion for blocking the movement of said card engaging/holding member to said second position, said blocking portion is provided at first position.

18. (withdrawn): The card transporting mechanism according to claim 17, wherein said card engaging/holding members are located at the front and rear positions of said carriage, said card engaging/holding member located closer to the trailing end of said card as viewed in the card transporting direction is located at said first position, and said card engaging/holding member located closer to the leading end of said card is located at said second position.

19. (withdrawn): The card transporting mechanism according to claim 18, wherein said card engaging/holding members located at said front and rear ends of said carriage are coupled together by an interlocking member coupled to said transportation drive member so that said card engaging/holding members are turned concurrently.

20. (withdrawn): The card transporting mechanism according to claim 19, wherein said interlocking member consists of a single lever, and a moving portion for moving said card engaging/holding member and a blocking portion are provided on said lever while corresponding to said two card engaging/holding members.

21. (currently amended): A shutter opening/closing mechanism for a card reader, comprising:

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a card entrance for inserting a card into the card reader;

a card transporting path in the card reader, into which the inserted card travels, said card entrance disposed at a first end of said card transporting path;

a shutter plate, disposed on a side of said card entrance, which opens and closes the card entrance by moving between a closing position for closing the card transporting path and an opening position for opening the card transporting path, said closing position and said opening position of said shutter plate being located at the side of said card entrance;

a drive source for moving said shutter plate; and

a connecting member for connecting a drive force of said drive source to said shutter plate,

wherein an opening/closing-side end face of said shutter plate is closed substantially parallel to said card transporting path at said closing position, and said opening/closing-side end face of said shutter plate is moved, by said drive source, substantially parallel to said card transporting path and said drive source is a solenoid, said connecting member includes a slide member moved by said solenoid and two turning members coupled together by said slide member, said opening/closing-side end face of said shutter plate is moved, by said two turning members, substantially parallel to said card transporting path and said two connecting turning members are coupled so as to follow said slide member in movement, and a blocking portion for blocking said slide member movement ~~from said turning member side~~ is provided between said two connecting members and said slide member and wherein further, the respective movements

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of said turning members, said slide member and said shutter plate are all in a substantially single plane.

Claims 22 and 23 (canceled).

24. (original): The shutter opening/closing mechanism according to claim 21, wherein said connecting member includes a slide member moved by said drive source, and one turning member coupled to said slide member, and said opening/closing-side end face of said shutter plate is moved, by said one turning member, substantially parallel to said card transporting path.

25. (previously presented): The shutter opening/closing mechanism according to claim 21, further comprising a card trap member detection mechanism, wherein said mechanism includes a detecting part connected to said drive source, and a microswitch connected to said detecting part, wherein said shutter plate is prevented from moving into said closing position when a card trap member is detected, thereby preventing said microswitch from turning on.

26. (currently amended): A shutter opening/closing mechanism for a card reader, comprising:

a card entrance for inserting a card into the card reader;

a card transport path, into which the inserted card travels, said card entrance disposed at a first end of said card transport path;

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a detector operable to detect a presence of a readable card in said card entrance;
a shutter plate operable to either block said card entrance by completely blocking said card transport path, or open said card entrance by being moved to a location other than said card entrance; and

a drive means for moving said shutter plate into a blocking position or an open position,
wherein said shutter plate and said card entrance are in a substantially single plane.

27. (previously presented): A shutter opening/closing mechanism for a card reader as claimed in claim 26, further comprising a groove adjacent said card transport path for receiving at least one entire side of said shutter plate when said shutter plate is moved to the blocking position.

28. (currently amended): A shutter opening/closing mechanism for a card reader, comprising:

a card entrance for inserting a card into the card reader;
a card transporting path in the card reader, into which the inserted card travels, said card entrance disposed at a first end of said card transporting path;
a shutter plate, disposed on a side of said card entrance, operable to open and close the card entrance by alternately moving between a normally closed position operable to block the card transporting path and an open position operable to open the card transporting path;
a drive source operable to move said shutter plate; and

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a pre-head disposed in the card transporting path between said card entrance and said shutter plate, said pre-head being operable to detect the presence of the card to control said drive source to move said shutter plate to the open position from the normally closed position,
wherein said shutter plate and said card entrance are in a substantially single plane.

29. (previously presented): A shutter opening/closing mechanism for a card reader as claimed in claim 28, wherein an opening/closing-side end face of said shutter plate is closed substantially parallel to said card transporting path at said closing position, and said opening/closing-side end face of said shutter plate is moved, by said drive source, substantially parallel to said card transporting path.